Andrew Schechtman-Rook
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EDUCATION

PhD, Astronomy, University of Wisconsin-Madison — December 2013
MS, Astronomy, University of Wisconsin-Madison — June 2009
BS, Astronomy, Case Western Reserve University — May 2007

EXPERIENCE

Independent NFL Analyst — 2013-Present
phdfootball.blogspot.com

- Designed a responsive online dashboard allowing users to visually filter 350,000 plays to identify and explore interesting game situations.
- Authored a Python library to compute play-by-play win probabilities based on game situation.
- Developed a program to automatically remove camera motion from NFL game footage.

Manager, Data Science — 2016-Present
Capital One

- Created a Python library to facilitate the creation and refinement of robust, production-ready data analysis pipelines, saving hundreds of hours of R&D effort.
- Led development of a proof-of-concept automated machine learning model deployment scheme for cloud-based applications.
- Constructed a Python model to predict credit card spend based on application information 25% better than existing procedure, and advised leadership on its value and proper use.

Principal Data Scientist — 2014-2016
Capital One Labs

- Implemented a novel approach to deliver internal technical trainings, providing over 5000 hours of classes with no instructors.
- Programmed and deployed an interactive course completion dashboard using Flask and dc.js to provide progress reports to individual students as well as company leadership.
- Engineered a credit card payment simulator, allowing a product team to gain actionable insights without expensive pilot programs.

Data Science Fellow — 2014
The Data Incubator

- Formulated a model to predict flight delay times based on historical airline on-time arrivals.
- Built a web interface to provide interactive itinerary input and visualizations to intuitively display model results.

Graduate and Postdoctoral Researcher — 2007-2014
University of Wisconsin-Madison

- Devised a fast Voronoi Tessellation algorithm in Python to adaptively bin images, preserving spatial resolution while maximizing signal in images with over one million pixels.
- Assembled a hybrid C++/Python pipeline to process hundreds of high-resolution images with minimal user intervention, resulting in a 10x increase in analysis precision.

SKILLS

Programming: Python, shell scripting, Javascript, C++
Databases and Web Design: Flask/Django, MySQL/PostgreSQL, Hive/Beeline
Cloud Computing: AWS (EC2, ECS, S3, Cloudformation), Ansible
Operating Systems: Linux, Mac OS X
Data Analysis: Parallel and distributed computing, machine learning, spatial analysis, image processing, machine vision